UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,691	05/14/2001	Anthony Beverina	8594-003-64 DIV	7109

7590   09/29/2005

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EXAMINER
FERRIS III, FRED O

ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/853,691	BEVERINA ET AL.
	Examiner	Art Unit	
	Fred Ferris	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 May 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>33-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>33-41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>14 May 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>5/14/01</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

1.   *Claims 1-41 have been presented for examination based on applicant's*

preliminary amendment filed 14 May 2001. Applicant's preliminary amendment has

cancelled claims 1-32. Claims 33-41 are currently pending in this application and have

been rejected by the examiner.

Drawings

2.   *The drawings are objected to because certain words appear to be misspelled.*

For example, in Figure 53 the word "interpreting" is misspelled as "interpretting", and in

Figure 32 the word "next" is misspelled as "nest".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

3.   Claims 33-39 and 41 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent 5,850,352 issued to Moezzi et al in view of U.S.

Patent 6,807,537 issued to Thiession et al in further view of "Applications of

Quantitative Modeling to Knowledge-Based Risk Assessment Studies", Biswas et

al, ACM 0-89791-320-5/89/0006/0092, ACM 1989

apparatus for assessing risk comprising:
- database storing information about at actor, environment, and expert observations;
- simulation gaming environment communicating with database determining threat vector and likelihood of success;
- plug-in interface communicating database, connectable to consequence calculator for consequence of undesirable event information; and
- decision support system communicating with database calculating risk based on probability and vulnerability.

Regarding independent claim 33: Moezzi et al teaches a simulated gaming environment (CL19-L1-15, Figs. 2, 3) inclusive of a virtual environment (Abstract, Figs. 2, 3) with actors (CL19-L2, i.e. characters) and a database (CL48-L5-45) storing and communicating information based on expert (CL48-L43-45) observations (i.e. expert system).

Moezzi does not explicitly disclose a decision support system in communication with the database.

Thiesson discloses decision support system in communication with the database (CL11-L43-61, Fig. 5) where the database includes expert knowledge from an expert in the field (i.e. expert observations) including an interface (pluggable) communicating with the database (CL11-L5-20, Fig. 4).

Moezzi and Thiesson do not explicitly teach calculating risk based on probability and vulnerability.

Biswas et al first sets forth that it is well established that assessing risk based on the probability that an unwanted or hazardous event will occur (for (i) possible events) is given by the formula:

$Risk = \sum_i (probability\ of\ event)_i \times (consequence\ of\ event)_i$

Hence, Biswas et al renders obvious the claimed limitations relating to assessing

risk by calculating a probability that an event will occur. Applicant's specification (page

1, line 8) indicates that "Risk can be defined as probability*vulnerability" where

vulnerability is simply the "susceptibility to the event multiplied by the consequences

associated with that event". Biswas sets forth the consequences associated with an

event as noted above. The specification further indicates that the calculation of

susceptibility, and hence "vulnerability", is simply based on input from experts in the

field (i.e. weighted based on expert knowledge). See specification, page 5, lines 14-21.

That is, the "susceptibility" is simply based on the subjective judgements of human

experts, and would therefore obviously be part of the well-known knowledge-based

(expert) AI techniques as disclosed by Biswas in Section 4. ". (Also see: sections 2-5.3)

Biswas et al therefore anticipates the limitations relating to calculating risk based on

probability and vulnerability, because these knowledge based AI techniques include

calculating risk based on event probability, and consequences which would obviously

include the "vulnerability" as assessed by experts in the field. (page 94, paragraphs 1-4,

page 95, paragraphs 1-5, page 93, paragraphs 5-7, Fig. 1) Hence a skilled artisan

would have knowingly implemented consequence calculator based on the teachings of

Biswas. Biswas el al further teaches the use of AI networks (i.e. event trees, nodes,

layers) in calculating risk based on probability and vulnerability (inherent) as noted

above. (Especially sections 5.0-5.3)

It would have been obvious to one having ordinary skill in the art at the time the

claimed invention was made to modify the teachings of Moezzi relating to a simulated

gaming environment with actors, with the teachings of Thiesson relating to a decision

support system, and to further modify the teaching of Moezzi and Thiesson with the

teachings of Biswas relating to assessing risk based on probability and vulnerability, to

realize the elements of the claimed invention. An obvious motivation exists since the

references all teach that AI knowledge-based techniques (i.e. expert knowledge

systems) can be applied to the risk analysis of any undesirable (unpredictable) or

hazardous event. (See: Biswas - Sections 1, 2, Thiesson - Background, Moezzi - CL48-

L5-45). Further, the level of skill required by an artisan to realize the claimed limitations

of the present invention is clearly established by both references. (See: Biswas /

Thiesson / Moezzi, Abstracts) Accordingly, a skilled artisan tasked with realizing an

apparatus for assessing the risk of an undesirable event based probability and

vulnerability in a simulated gaming environment, and having access to the teachings of

Moezzi, Thiesson, and Biswas, would have knowingly modified the teachings of Moezzi

with Thiesson, and further modified them with the teachings of Biswas, to realize the

claimed elements of the present invention while reducing the cost and development

time.

Per dependent claim 34: Report generators are well-known in the art and would

have knowingly been incorporated by a skilled artisan as a method of outputting the

assessed risk information. (see: "report generator", Microsoft Computer Dictionary,

1997)

Per dependent claim 35: Remote terminals sharing database information are

well-known in the art and would have knowingly been incorporated by a skilled artisan

as a method of sharing the assessed risk information among users. (see: "remote

terminal" and "database (sharing)", Microsoft Computer Dictionary, 1997)

Per dependent claims 36 and 37: Object oriented databases are well-known in

the art and would have knowingly been incorporated by a skilled artisan as a method of

organizing the database. (see: "object oriented database", Microsoft Computer

Dictionary, 1997)

Per dependent claim 38: Biswas teaches that the risk factors are historically

based. Hence, historical information would have knowingly been incorporated by a

skilled artisan using the same reasoning set forth above. (5.1-5.2)

Per dependent claim 39: Database editors are well-known in the art and would

have knowingly been incorporated by a skilled artisan as a method of editing the

database. (see: "editor", Microsoft Computer Dictionary, 1997)

Per dependent claim 41: Thiesson teaches Bayesian networks (abstract) and

would have knowingly been incorporated by a skilled artisan using the reasoning set

forth above.

4.   Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable in further

view of "Installation Force Protection Guide", United States Air Force, 1997.

(Hereafter, IFPG)

As previously cited above, the combination of Moezzi, Thiesson, and Biswas

renders obvious the elements of independent claim 33 relating to assessing risk based

on probability and vulnerability.

Moezzi, Thiesson, and Biswas do not explicitly disclose assessing the risk of terrorist attack.

IFPG teaches strategies for risk reduction through protection, planning, construction, and design inclusive of vulnerability assessment (section C, page 9) that includes the susceptibility to attack from a terrorist threat (section B, part 2, page 8).

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to further modify the teachings of Moezzi, Thiesson, and Biswas with the teachings of IFPG relating to risk of a terrorist threat using the same reasoning as previously set forth above.

Conclusion

9.   *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.*

U.S. Patent 6,507,353 issued to Huard et al teaches a virtual environment with actors and event consequences.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the
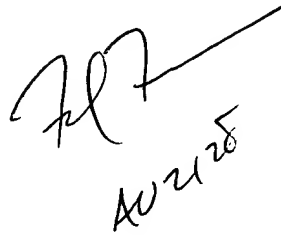
examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can

be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306

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